

Claims

1. Shifting element system for a transmission comprising at least one first shifting element (10) and one free wheel (20) wherein one input element of said free wheel (20) is mechanically coupled with one input element of said first shifting element (10) and wherein one output element of said free wheel (20) is non-torsionally connected with one output element of said first shifting element (10), characterized in that said input and output elements of said first shifting element (10), discs (17) of said first shifting element (10), free wheel (20) and input and output elements of said free wheel (20) form a pre-assemblable unit, a free-wheel sprag unit (27) of said free wheel (20) having one bending elastic holding device (28) by which said input element of said free wheel (20), during and after assembly of said pre-assembled unit in the transmission, is axially movably fixed opposite said output element of said first shifting element (10).

2. Shifting element system according to claim 1, characterized in that said free wheel (20) is disposed in axial direction next to said discs (17) of said first shifting element (10) wherein between said discs (17) of said first shifting element (10) and said output element of said free wheel (20), a disc-shaped ledge (15) of said output element of said first shifting element (10) is situated on whose first front face said discs (17) of said first shifting element (10) abut directly in axial direction and support themselves during an actuation of said first shifting element (10) and on whose second front face opposite said front face, said output element of said free wheel (20) directly abuts in axial direction.

3. Shifting element system according to claim 1 or 2, characterized in that said unit comprising said input and output elements of said first shifting element (10), the discs (17) of said first shifting element (10), said free wheel (20) and said input and output elements of said free wheel (20) has in addition discs (32, 33, 34) of said second shifting element (20) which abut axially on said output element of said free wheel (20) on the side of said free wheel (20) remote from the said discs (17) of said first shifting element (10).

4. Shifting element system according to claim 1, 2 or 3, characterized in that said free-wheel sprag unit (27) or the holding device (28) of said free-wheel

sprag unit (27) is axially fixed on said output element of said first shifting element (10).

5. Shifting element system according to claim 4, characterized in that said free-wheel sprag unit (27) or said holding device (28) of said free-wheel sprag unit (27) is axially fixed between said discs (17) of said first shifting element (10) and said output element of said free wheel (20).

6. Shifting element system according to any one of claims 1 to 5, characterized in that said bending elastic holding device (28) is designed as snap-on spring.

7. Shifting element system according to any one of claims 1 to 6, characterized in that said free-wheel sprag unit (27) of said free wheel (20) and said bending elastic holding device (28) are designed in one piece.

8. Shifting element system according to any one of claims 1 to 6, characterized in that said bending elastic holding device (28) is made as part of spacers by which the clamping elements of said free wheel (20) are passed into said free-wheel sprag unit (27).

9. Shifting element system according to any one of claims 1 to 8, characterized in that said input element of said first shifting element (10) and said input element of said free wheel (20) are designed in one piece.

10. Shifting element system according to claim 9, characterized in that said bending elastic holding device (28) in assembled state axially movably engages in a radial rear section (29) of said input element of said free wheel (20) which extends axially between a multi-disc toothing (12) of said input element of said first shifting element (10) and a tread (22) of the clamping elements of said free wheel (20).

11. Shifting element system according to any one of claims 1 to 10, characterized in that said output element of said free wheel (20) is axially fixed in said output element of said first shifting element (10).

12. Shifting element system according to claim 11, characterized in that said output element of said free wheel (20) has a circular groove (24) in which engages a locking element for axial fixing of said output element of said free wheel (20).

13. Shifting element system according to claim 11 or 12, characterized in that said locking element is designed as locking pin (25) or as bolt or as fitted key.

14. Shifting element system according to any one of claims 3 to 13, characterized in that said output element of said first shifting element (10) has a multi-disc toothing (16) in which said output element of said free wheel (20) and discs (33, 34) of said second shifting element engage with positive fit.

15. Shifting element system according to any one of claims 3 to 14, characterized in that a hydraulic reset device (36) of said second shifting element (30) is at least partly integrated in said output element of said first shifting element (10).

16. Shifting element system according to any one of claims 1 to 15, characterized in that in that a hydraulic reset device (19) of said first shifting element (20) is at least partly integrated in said output element of said first shifting element (10).

17. Shifting element system according to any one of claims 1 to 16, characterized in that said input element of said first shifting element (10) is designed as inner disc carrier (11), said output element of said first shifting element (10) as outer disc carrier (13), said input element of said free wheel (20) as free-wheel inner ring (21) and said output element of said free wheel (20) as free-wheel outer ring (23).

18. Shifting element system according to any one of claims 1 to 16, characterized in that said input element of said first shifting element is designed as outer disc carrier, said output element of said first shifting element as input disc carrier, said input element of said free wheel as free-wheel outer ring and said output element of said free wheel as free-wheel inner ring.

19. Shifting element system according to any one of claims 1 to 18, characterized in that said first shifting element (10) is designed as multi-disc brake, the pre-assembled unit being insertable as one whole in a transmission housing (1).

20. Shifting element system according to any one of claims 1 to 18, characterized in that said first shifting element is designed as multi-disc clutch.

21. Shifting element system according to any one of claims 1 to 20, characterized in that said free wheel (20) is designed as roller free wheel.

22. Shifting element system according to any one of claims 1 to 20, characterized in that said free wheel (20) is designed as clamping body free wheel.